

Meteorological record of voluntary observers and army post surgeons—January, 1885.

Temperature				Station.	Temperature				Station.	Temperature				Station.	Temperature				
Mean.	Maximum.	Minimum.	Rainfall.		Mean.	Maximum.	Minimum.	Rainfall.		Mean.	Maximum.	Minimum.	Rainfall.		Mean.	Maximum.	Minimum.	Rainfall.	
Orono, Me.	16.0	53	22	4.73	Asheville, N. C.	36.0	62	10	4.20	Marietta, Ohio	28.0	59	-4	6.22	Dawson, Nebr.	14.0	.....	.....	1.31
Cornish, Me.	18.2	48	13	4.00	Lenoir, N. C.	35.0	62	11	4.90	McConnelsville, Ohio	25.1	57	-6	5.28	DeWitt, Nebr.	16.9	.....	.....	0.50
Gardiner, Me.	19.2	51	15	5.26	Brevard, N. C.	38.5	59	11	12.90	Pomeroy, Ohio	29.5	56	0	6.72	Stromsburg, Nebr.	18.4	.....	.....	0.50
Waterville, Me.	13.5	43	16	.....	Lincolnton, N. C.	35.0	61	14	2.58	Granville, Ohio	22.6	57	10	4.15	Madison, Nebr.	9.6	44	24	3.50
Contoocook, N. H.	21.3	61	19	5.30	Highland, N. C.	32.3	53	9	9.65	Lafayette, Ind.	17.0	50	33	3.30	Stockham, Nebr.	24.0	50	0	0.00
Ashland, N. H.	.....	.....	.....	5.69	Raleigh, N. C.	40.0	69	16	4.00	Fort Wayne, Ind.	17.0	46	22	2.75	West Hill, Nebr.	7.6	.....	.....	0.31
Woodstock, N. H.	.....	.....	.....	5.32	Statesville, N. C.	39.0	67	14	5.95	Logansport, Ind.	18.6	51	25	2.01	Yutan, Nebr.	9.4	56	26	0.40
Belmont, N. H.	.....	.....	.....	5.06	Weldon, N. C.	39.5	72	15	4.76	Laconia, Ind.	26.5	60	10	5.90	Caryville, Mo.	20.0	68	15	2.71
Wolfborough, N. H.	.....	.....	.....	4.58	Chapel Hill, N. C.	39.2	77	14	5.24	Terre Haute, Ind.	21.9	49	17	1.31	Booneville, Mo.	32.0	50	14	0.75
Lake Village, N. H.	.....	.....	.....	4.71	Stateburg, S. C.	46.0	72	20	6.04	Sanman, Ind.	26.9	49	18	3.09	Independence, Mo.	26.3	50	14	0.75
Charlotte, Vt.	16.8	50	16	4.30	Aiken, S. C.	46.0	74	19	8.16	Jeffersonville, Ind.	26.9	53	9	5.35	Greenfield, Mo.	26.3	62	12	0.90
Burlington, Vt.	20.8	54	15	2.36	Pacolet, S. C.	37.6	62	16	.....	Spiceland, Ind.	16.9	49	19	4.00	Pierce City, Mo.	24.3	63	11	1.20
Woodstock, Vt.	15.6	52	20	4.42	Milledgeville, Ga.	44.0	71	21	8.37	La Grange, Ind.	17.7	42	18	3.96	Springfield, Mo.	29.1	62	9	2.80
Dorset, Vt.	19.2	55	15	6.26	Forsyth, Ga.	44.7	72	19	7.94	Vevay, Ind.	20.7	52	10	5.45	Conception, Mo.	13.1	49	21	0.52
Lunenburg, Vt.	15.4	50	19	0.70	Athens, Ga.	39.5	60	16	7.88	Angola, Ind.	15.0	48	18	2.44	Centerville, Mo.	63	12	2.14	
Newport, Vt.	15.3	50	21	4.39	Manatee, Fla.	64.1	86	42	4.34	Wabash, Ind.	19.0	48	21	2.68	Carthage, Mo.	25.9	60	17	.....
Stratford, Vt.	15.7	48	18	4.40	Archer, Fla.	61.1	81	31	8.18	Monticello, Ind.	15.6	47	29	2.83	Chamorio, Mo.	22.3	64	14	2.95
Amherst, Mass.	23.5	58	8	4.21	Mayport, Fla.	59.1	81	41	5.86	Attica, Ind.	15.2	46	30	3.56	Warrenton, Mo.	19.9	55	18	.....
Dudley, Mass.	.....	.....	.....	3.86	Tallahassee, Fla.	48.5	71	26	.....	Counersville, Ind.	20.9	49	16	3.66	Glasgow, Mo.	18.1	54	13	2.16
Mendon, Mass.	23.6	57	4	.....	Newport, Fla.	52.2	73	26	8.21	Noblesville, Ind.	24.0	55	25	3.56	Harrisonville, Mo.	19.8	50	14	2.85
Milton, Mass.	24.5	54	0	5.83	Limona, Fla.	60.3	83	38	3.80	Greenfield, Ind.	18.5	48	21	.....	Houstonia, Mo.	18.0	58	18	2.50
New Bedford, Mass.	27.5	53	1	3.79	Fort Barrancas, Fla.	50.5	86	20	11.46	Franklin, Ind.	20.8	51	19	3.63	Ironport, Mo.	24.8	67	15	3.10
Somerset, Mass.	27.2	48	4	5.26	Saint Augustine, Fla.	58.6	79	35	4.86	Fillmore, Ind.	17.4	46	21	3.24	Mascoutah, Ill.	22.5	62	12	2.66
Leicester, Mass.	21.5	55	9	4.90	Green Springs, Ala.	43.2	73	15	7.04	Crawfordsville, Ind.	17.6	55	26	.....	Kirksville, Ill.	14.3	40	18	2.00
Williamstown, Mass.	25.9	56	10	6.63	Mt. Vernon B'ks, Ala.	49.9	76	16	6.58	Furmland, Ind.	19.1	47	24	3.96	Lexington, Mo.	15.2	51	16	1.87
Westborough, Mass.	22.8	56	8	4.47	Greensboro, Ala.	39.2	70	19	8.94	Mauzy, Ind.	18.2	48	20	3.69	Louisiana, Mo.	16.9	60	18	2.88
Fall River, Mass.	27.4	55	2	5.11	Point Pleasant, La.	42.0	66	19	4.30	Romey, Ind.	16.1	52	33	3.01	Mexico, Mo.	.....	53	22	2.91
Taunton, Mass.	27.8	58	3	5.56	Liberty Hill, La.	.....	68	10	.....	Duna, Ind.	.....	50	27	6.00	Miami, Mo.	18.0	53	16	2.76
Deerfield, Mass.	20.8	48	18	.....	Luling, La.	.....	76	23	7.83	Richmond, Ind.	20.1	47	15	3.70	Oregon, Mo.	14.2	51	18	1.70
Rowe, Mass.	17.9	48	12	4.50	Grand Coteau, La.	51.1	76	21	6.91	Columbus, Ind.	23.2	54	14	3.82	Pleasant Hill, Mo.	16.8	52	13	1.30
Worcester, Mass.	22.9	54	4	5.01	Cleburne, Tex.	34.1	69	4	4.48	Blue Lick, Ind.	25.0	55	11	5.58	Steelville, Mo.	.....	22	2.20	.....
Providence, B. I.	30.5	60	4	5.26	Fort Brown, Tex.	53.4	80	29	2.32	Huntington, Ind.	14.0	42	23	.....	Sedalia, Mo.	18.8	60	18	4.01
Nayatt Point, R. I.	.....	54	0	5.55	Clarksville, Tex.	38.8	68	6	4.11	Princeton, Ind.	24.0	54	11	3.80	Phelps City, Mo.	13.0	40	22	0.80
Hartford, Conn.	25.9	59	6	4.02	Fort Concho, Tex.	37.2	74	2	.....	Worthington, Ind.	21.6	52	21	3.29	Saint Charles, Mo.	.....	73	5	2.05
Southington, Conn.	24.0	59	8	4.20	Austin, Tex.	45.0	70	24	5.37	Huntingburg, Ind.	25.3	61	8	5.21	Port Tem, Mo.	28.8	73	5	2.05
North Colebrook, Conn.	20.6	55	18	3.00	Lead Hill, Ark.	28.8	73	6	2.05	Degonia Springs, Ind.	26.0	61	8	5.21	Atchison, Kans.	16.2	44	12	1.27
Voluntown, Conn.	.....	55	0	4.60	Helvetia, W. Va.	30.7	60	6	5.90	Salem, Ind.	24.7	54	11	1.17	Independence, Kans.	20.0	54	13	2.12
Mountainville, N. Y.	26.6	50	0	4.39	Austin, Tenn.	34.9	62	0	5.87	Corydon, Ind.	26.0	59	10	8.06	Wyandotte, Kans.	21.5	52	9	1.31
Palermo, N. Y.	17.7	48	13	3.41	Ashwood, Tenn.	34.0	66	2	5.00	Mitchell, Ind.	24.2	50	12	.....	Salina, Kans.	20.7	52	21	1.06
Auburn, N. Y.	23.0	51	2	5.78	Greenville, Tenn.	37.0	62	14	3.30	Bloomington, Ind.	25.8	52	18	3.48	Emporia, Kans.	28.2	57	12	1.20
Menand, N. Y.	20.8	52	11	3.80	Maryville, Tenn.	36.0	65	13	7.88	Tipton, Ind.	18.3	48	30	.....	Clay Centre, Kans.	17.3	57	22	1.11
Ithaca, N. Y.	21.5	58	6	2.09	Andersonville, Tenn.	33.0	66	4	7.68	Mattoon, Ill.	22.0	45	20	2.47	Fort Scott, Kans.	24.4	57	12	.....
Le Roy, N. Y.	20.9	55	7	2.53	Careyville, Tenn.	33.0	66	3	10.08	Collinsville, Ill.	22.0	45	20	2.47	W. Leavenworth, Kans.	.....	54	10	0.86
Penn Yan, N. Y.	.....	56	12	2.14	Parksville, Tenn.	37.0	65	12	7.61	Sycamore, Ill.	10.2	41	26	2.66	Maud, Kans.	19.3	58	18	2.80
Cooperstown, N. Y.	19.0	56	11	3.15	Sunbright, Tenn.	36.0	69	0	9.25	Sandwich, Ill.	10.9	46	31	2.85	Wellington, Kans.	28.9	51	10	1.20
North Volney, N. Y.	19.7	49	13	.....	Grief, Tenn.	35.0	69	10	9.95	Wilcox Centre, Ill.	11.9	48	32	3.62	Allison, Kans.	14.3	59	28	0.32
Port Jervis, N. Y.	22.9	42	3	.....	Farmingdale, Tenn.	.....	69	8	8.73	Peoria, Ill.	16.8	48	22	3.62	Topeka, Kans.	17.2	56	14	1.34
Factoryville, N. Y.	21.3	49	10	2.14	Postoria, Tenn.	33.0	58	5	4.40	Swanwick, Ill.	22.2	60	14	2.61	Lawrence, Kans.	18.7	56	12	1.06
White Plains, N. Y.	29.8	60	2	4.55	Sweet Water, Tenn.	33.0	65	9	9.90	Anna, Ill.	25.9	62	12	4.64	Manhattan, Kans.	13.3	53	20	0.99
Fort Niagara, N. Y.	21.0	43	1	1.38	Grassy Cove, Tenn.	32.0	59	2	6.40	Rockford, Ill.	11.2	44	28	2.39	Sherlock, Kans.	18.8	53	19	0.99
Fort Columbus, N. Y.	28.9	61	10	3.19	McMinnville, Tenn.	35.0	60	3	8.64	Riley, Ill.	8.8	40	26	3.22	Stirling, Kans.	18.0	55	22	1.40
West Point, N. Y.	27.9	66	10	4.90	Manchester, Tenn.	33.0	60	4	9.95	Hudson, Mich.	13.9	45	23	1.07	Holton, Kans.	16.7	52	22	3.00
Madison Barracks, N. Y.	19.6	50	30	2.20	Riddleton, Tenn.	32.0	64	5	9.95	Hillsdale, Mich.	.....	45	17	2.47	Richardton, Dak.	0.4	37	39	1.90
Plattsburg Barracks, N. Y.	16.5	47	17	2.57	Beech Grove, Tenn.	35.0	65	4	7.24	Manistowic, Mich.	8.0	45	36	2.05	Fort Yates, Dak.	2.2	45	34	0.42
Fort Hamilton, N. Y.	31.0	56	3	2.24	Fiat Rock, Tenn.	35.0	61	5	5.33	Moorestown, Mich.	11.3	42	32	2.42	Fort Totten, Dak.	-6.4	35	40	0.18
David's Island, N. Y.	29.8	63	5	2.97	Florence Station, Tenn.	35.0	63	1	5.33	Ann Arbor, Mich.	15.2	47	27	2.54	Fort Sisseton, Dak.	-2.7	40	37	0.48
Phillipsburg, N. J.	29.4	66	2	3.08	Howell, Tenn.	36.0	64	6	6.22	Ionia, Mich.	16.2	44	20	3.15	Fort Sully, Dak.	5.6	56	34	0.18
Somersville, N. J.	28.2	58	3	3.88	Hardison's Mills, Tenn.	34.0	60	2	6.36	Traverse City, Mich.	35								

Prevailing direction of wind, northwest.

Average number of frosts, 6.

A meteor was seen at Tuscumbia on the 7th, passing through "Taurus" from north to south.

Lunar halos were observed on the 28th at Greensboro "with a radius of 20°" at Birmingham, Marion, Montgomery, Clanton, and Dadeville; on the 21st at Tuscumbia; and on the 20th at Chattanooga.

Thunder storms were general throughout the state on the 11th and 27th. The display of electricity on the 11th was especially remarkable. Tuscumbia and Trinity report thunder storms on the 15th also.

Hail is reported from nearly all stations on the 27th. The storm came up very rapidly from the northwest; it was accompanied by strong winds and considerable electricity.

Tuscumbia reports hail also on the 11th.

Sleet was generally observed on the 23d; at Florence and Tuscumbia on the 16th, and at Birmingham on the 20th.

A slight fall of snow is reported on the 17th by Wetumpka, Birmingham, Tuscumbia, and Trinity; on the 23d by Jacksonville, Centre, and Edwardsville; and on the 25th by Russellville and Trinity.

Florence reports ice eighteen days, Tuscumbia fifteen days, on the 22d it was three and a half inches thick, and it was being gathered to store away for summer; Newton reports ice seven days and Auburn nine days.

Fog was general on the 24th.

The following meteorological summary for January, 1885, has been forwarded by Hon. J. T. Henderson, Commissioner of Agriculture for Georgia:

Districts.	Temperature.			Precipitation.
	Highest.	Lowest.	Mean.	
Northern Georgia.....	64.0	5.0	38.5	9.61
Central Georgia.....	75.0	18.0	44.6	7.85
Southern Georgia.....	77.0	21.0	48.8	8.73
State.....	77	5.0	44.0	8.75

The following meteorological summary for January, 1885, is from the report of Mr. S. D. Fisher, director of the "Illinois Weather Service: "

Districts.	Temperature.			Precipitation.
	Highest.	Lowest.	Mean.	
Northern counties.....	48.0	-26.4	17.9	2.48
Central counties.....	54.0	-21.0	18.4	2.64
Southern counties.....	64.0	-19.0	23.6	2.91
State.....	64.0	-26.4	18.0	2.68

The following meteorological summary and accompanying remarks are from the January, 1885, report of the Indiana Volunteer Weather Service, under direction of W. H. Ragan, of De Pauw University, Greencastle:

Districts.	Temperature.			Precipitation.
	Highest.	Lowest.	Monthly mean.	
Northern counties.....	51	-29	16.7	2.54
Central counties.....	55	-33	19.2	3.74
Southern counties.....	61	-21	24.9	4.77
State.....	61	-33	20.3	3.68

All minimum temperatures occurred on the 22d, in the morning, except Monroe county, 23d.

The mean was from five to ten degrees below the normal at all stations from which reports for several years have been received. Two previous Januaries out of thirteen were colder at Indianapolis, and two out of twenty-two at Logansport. It was warmest at Indianapolis, Logansport, and Romney in 1880, and coldest at the two former in 1875.

The range in mean temperature from year to year is something remarkable, being 25.2 at Indianapolis; 32.5 at Logansport; 11.5 at Maury, and 30.9 at Romney.

The precipitation was greater five years at Indianapolis; nine at Logansport; three at Maury, and two at Romney; and the snowfall one at Logansport and Romney and two at Maury.

The mean temperature and precipitation for December and January combined, during the past three years, were as follows:

	Temp.	Precip.
1882-'3	27.0	2.45
1883-'4	26.9	2.80
1884-'5	24.4	4.79

showing the present season to have been much the coldest of the three, with nearly two inches excess of precipitation.

It is to be regretted that observations have begun so lately that sufficient data are not at hand to make studies of the weather conditions, in connection with the vital and material statistics of our state, of any great value. We expect these observations, when continued through a long series of years, to be of great importance in the discussion of the above subjects.

Ample warning was given of the approach of all cold-waves by the Signal Service. It is greatly to be desired that these warnings should reach all to whom they would be of value.

February, so far, has been unusually cold, and it would be of much interest for those having records covering many years to examine and determine in how many instances a cold December was followed by a cold January or February, etc.; and also the bearing of a cold winter on the opening of spring. This office will cheerfully undertake the investigation if furnished the data.

The following meteorological summary and accompanying remarks are from the January, 1885, report of the "Indiana Weather Service," under direction of Professor H. A. Huston, of Purdue University, Lafayette:

Districts.	Temperature.			Precipitation.
	Highest.	Lowest.	Mean.	
Northern counties.....	51.0	-40.0	17.0	2.57
Central counties.....	51.0	-33.0	20.5	3.57
Southern counties.....	61.0	-14.0	25.2	5.71
State.....	61.0	-40.0	21.1	3.95

The mean temperature for the state, 21°.09, is 1°.09 above that for January of last year, 7°.84 below the mean for fourteen years at Indianapolis and 2°.27 below the mean for six years at this station. The mean precipitation for the state, 3.95 inches, is 2.26 above that of last year; 1.12 above the mean for fourteen years at Indianapolis, and 1.48 above the mean of six years at this station. The mean snow-fall for the state, 13.03 inches, is .34 inch below that of last year. The sleet of the 15th was particularly severe at Knightstown and Spiceland. The thunder-storm of the 11th was general throughout the central and southern counties, being very severe at Princeton. A remarkable solar halo was observed at Miami on 21st instant.

The following is an extract of the January, 1885, report of the "Minnesota Weather Service," under direction of Professor Wm. W. Payne, of the Carleton College, Northfield:

A review of the weather for this state for January, 1885, shows the 1st and 2d, to have been very cold, when the maximum weight of the air at the central station for the month was noted at 9 p. m. on the 1st, (barometer 30.699) The minimum temperature of the month was observed at 7 a. m. of the 2d, -40°.9, the lowest reading ever made at this station. Readings of -40° and below throughout the state were generally reported at this date. After 7 a. m. of the 2d, there was a general decline in pressure throughout the state and the northwest in general, with the greatest depression in the British northwest, thus producing a general indraught of warm air from southerly latitudes and the Pacific ocean, producing "Chinook" winds and a thaw in Montana, to the great relief of the cattle interest in that territory, and materially warmer weather in Minnesota. During this mild term the maximum temperatures of the month were generally observed (37°.3 at central station on the 8th, and 47° at Saint Paul on the 5th). The pressure remained below 30.00 inches until the night of the 10-11th, when this body of light air was rapidly displaced by an area of heavy, cold, dry air in the region above named, producing northerly air currents, a high barometer, and a cold term, which lasted, with but slight interruptions, until the 29th, when there was a decrease in pressure and a marked rise in temperature, the month ending with light winds and mild weather.

The precipitation for the month was small, the normal condition for this region during the winter months. It was nearly all in the form of snow and in measurable quantities only on the 5th, 6th, 11th, 16th, 22d, 24th, 29th, and 31st.

The following is the January 1885, report of the "Missouri Weather Service," under direction of Prof. Francis E. Nipher, " Saint Louis:

The mean temperature for January, 1885, at the central station, was 22°.5, which is 9° below the normal temperature. The January mean has been still lower only three times since 1837, the lowest being 19°.3 in 1857. The lowest temperature of the month was -12°. The daily minimum was above the freezing point six times during the month, and fell to or below zero seven times. The average temperature of the coldest day of the month was -1°.1, on the 22d, the warmest day, the 8th, having a mean temperature of 54°.

The rainfall was 3.56 inches at the central station, the average for January being 2.17 inches. The snowfall was 10 inches.

In the state, the lowest temperature recorded was -22° at Mexico and Steelville, which is 1° warmer than the coldest temperature observed by Engelmann in Saint Louis in forty-seven years. Kirksville, Houstonia, Louisiana and Oregon report -18° . The highest minimum reported was -4° at Cairo, Ill. The highest maximum reported was 68° at Saint Louis, a temperature often observed in summer. Lexington reports that the temperature fell below 32° on twenty-eight days, and did not rise above 32° on twenty days. It was below zero on thirteen days, and on one day did not rise above zero.

The mean temperature has ranged from 14.3° at Oregon and Kirksville, to 29.8° at Cairo.

The rainfall (melted snow) has been greatest in the central part of the state, being four inches at Sedalia, diminishing to between one and two inches in the northwest.

To the southeast the fall diminishes slightly, rising to over three inches along the Mississippi from Saint Louis to Cairo.

The snow-fall was greatest in the northern and central-northern parts of the state, being twenty-two inches at Louisiana, eighteen inches at Kirksville, seventeen at Mexico, Houstonia and Chamois, sixteen at Miami, fourteen at Boonville, thirteen at Oregon and Sedalia, twelve at Glasgow and Lexington, eleven at Harrisonville, ten at Saint Louis, nine at Carthage, eight at Ironton and Centerville, five at Greenfield, and four at Pleasant Hill. At the end of the month, snow covered the entire state, except perhaps in the extreme south where the returns are meagre. At Kirksville, Chamois and Miami, the snow was eight inches deep at the end of the month, Louisiana, seven; Glasgow, Houstonia, and Oregon, five; Boonville, three; Harrisonville, Carthage, Lexington and Ironton, two, and at Mexico, one.

Lexington reports that "wheat has been well protected by the snow. Peach buds in this locality uninjured, 15° below zero appearing to be about the danger-line for peach, apricot and cherry." Oregon reports "peaches thought to be nearly all killed. Wheat in good condition under the snow. Hog disease which prevailed during November, December, and the beginning of January, is subsiding." Chamois reports the mean temperature to be 7.44° below the normal for the last twelve years, and an excess of precipitation of 1.79 inches above the average of the last six years.

At Houstonia on the 21st, from 9 to 10 a. m., a solar halo of 22° radius with parhelia, and traces of the upper contact arch, together with the upper contact arch to the halo of 46° radius were observed. Centerville reports that although the minimum temperature of the air during the past January was 12° above that of 1884, the minimum temperature of the soil three inches below the surface was 4° colder during the last month, than during January, 1884.

The following is an extract from the January, 1885, report of the "Nebraska Weather Service," under direction of Prof. Goodwin D. Swezey, of Doane College, Crete:

The opening day of the month and year was a remarkable one in many respects. It opened with a cold wave which gave the lowest temperature of the season; the barometer indicated the highest pressure of the month, and at the central station the highest since the observatory was built; at this station also there was not a cloud in the sky nor scarcely a perceptible movement of the air, so that the total movement of the wind for the twenty-four hours was but five miles, which is well nigh unexampled for this region.

The unusual cold weather of last month has continued, the mean temperature for this month being lower than the normal by about 9° , and being several degrees lower than any past January for seven years, except in 1883. The precipitation has been a little below the normal, and the number of cloudy, clear, and stormy days about as usual.

The average of rain and melted snow, chiefly the latter, for the different sections of the state for January, 1885, is as follows: ne. section, 0.52 inch; se. section, 0.81; nw. section, 0.31; sw. section, 0.65. Greatest number of days of appreciable precipitation, 9 at Omaha and Dawson; least, 1 at Keene.

The following extract is taken from the January, 1885, report of the New England Meteorological Society, under direction of Professor Winslow Upton:

SUMMARY FOR JANUARY, 1885.

The following discussion of the meteorological conditions of the month is based upon reports from eighty observers, and upon the current publications of the United States Signal Service:

General Conditions.—The month has been characterized by excessive rain and snow, and by marked fluctuations of temperature. The most notable peculiarity was the complete change in the conditions near the middle of the month, by which it was divided into two periods having essentially different characteristics. The first half of the month was much warmer than the average, and the precipitation in the form of rain; the latter half was much colder than the average, and the precipitation largely in the form of snow. At the beginning of the month there was no frost in the ground in the southern portion, and but little in the northern; at the middle of the month the frost had again nearly disappeared, but at its close the ground was everywhere frozen and generally covered with abundant snow, while the ponds and rivers were coated with heavy ice.

Precipitation.—The amount of precipitation was, with few exceptions,

above the average, the excess having been about thirty-four per cent. There were five well-marked periods of precipitation, centering about the 7th, 12th, 17th, 25th, and 28th, and coincident with the movements of barometric depressions. In the first and second the form was rain; in the third and fourth, combined rain and snow; and in the fifth, almost wholly snow. The greater amount of the monthly precipitation was recorded in the first three.

Temperature.—The average temperature was nearly normal, but this does not exhibit the real character of the month. In addition to the marked difference between the earlier and latter days mentioned above, the daily changes were unusually severe. While the extremes reached were exceeded in the preceding month, the average ranges were large. Flowers were picked and some plowing done in the first decade. The temperature was generally below the normal after the 18th, the lowest temperatures of the month occurring near the 23d and 29th. At Mount Washington the minimum temperature, -50° , was the lowest ever observed at that station.

Pressure.—As in the case of temperature, the daily fluctuations in barometric pressure were unusually great. Five severe depressions passed in the vicinity of New England, moving from the southwest and attended by heavy rain or snow. The dates of passage have been already given. Four of these were of the normal type of winter cyclonic movements, but the remaining one, the third in order of occurrence, was of a special type. On the 15th and 16th a long and narrow barometric depression, but little below the normal, prevailed from the Gulf to Lake Erie; from this on the latter date, a depression with steep gradients formed with great rapidity and moved rapidly towards the Saint Lawrence and thence into the ocean, attended by violent gales. The pressure fell 0.7 inch in eight hours at Portland. The pressure was also unusually high in the areas of high pressure which passed over New England.

Wind.—Severe gales attended each of the barometric depressions and also the areas of high pressure which followed them. At Eastport, a velocity of 52 miles an hour was recorded on the 28th. At the summit of Mount Washington, velocities of over 100 miles an hour were experienced on eight days. On the 22d the daily movement was 2,140 miles, the largest ever recorded at the station, while the total movement of the month was 36,515 miles. It is estimated that the actual movement was 2,000 miles greater, as the formation of frost work interfered with the free working of the anemometer.

Miscellaneous.—Auroras were generally noted on the 8th, and at a few stations on the 17th.

Thunder and lightning are reported from Taunton and Cotuit in the early morning of the 28th, during the storm then occurring.

Solar halos were noted on several occasions, that on the 30th with accompanying parhelia having attracted much attention.

During the whole month the sun has been surrounded by a pinkish-white haze, as noted in previous months.

The following is an extract from the January, 1885, report of the "Ohio Meteorological Bureau," under direction of Prof. T. C. Mendenhall:

The mean atmospheric pressure for the month was somewhat lower than that of January, 1883, and 1884. There were two periods in the month of high barometer, the 3d and 22d, and there were also two periods of depression, the 6th and 11th. The minimum, 29.120 inches, being the lowest yet reported to the bureau. Mr. Stokely, the observer at Canton, reports the change in twenty-three hours, from 10 p. m., January 16th, to 9 p. m., January 17th, to be 1.242 inches. The range of barometer, 1.664 inches, is greater than that for the entire year 1883, and is but two hundredths less than the entire range of 1884. As indicated above in Mr. Stokely's report, the rise and fall were very sudden on one or two days.

The mean temperature, 22.6° , is 1.5° below what may be considered as the normal. Although below the normal it is 3.2° above the mean for January, 1884. The maximum, 76.0° , which occurred on the 9th, is 15.0° above the maximum for January, 1883, and 16.3° above that of January, 1884. The minimum, -31.0° , is 3° below that of January, 1884. The northern and southern portions of the state had their lowest temperature on the 22d, while the central and north central parts report the lowest on the 29th. While the mean for the whole state is nearly up to the normal, in some parts of the state, and especially in the northwestern, the mean was much below the normal.

State summary.

Mean barometer, 30.162 inches; highest barometer, 30.784 inches on the 2d at Wauseon; lowest barometer, 29.120 inches on the 6th at Hiram; range of barometer, 1.664 inches; mean relative humidity, 82.0 per cent.; mean temperature, 22.6° ; highest temperature, 76.0° on the 9th at Ironton; lowest temperature, -31.0° on the 29th at Junction; range of temperature, 107.0° ; greatest daily range of temperature, 58.5° on the 30th at Sidney; least daily range of temperature, 1.2° on the 7th at Hiram.

Average number of clear days, 8; fair days, 11; cloudy days, 12; days on which rain fell, 13.9. Greatest number of days on which rain fell, 19 at Cincinnati and Canton; least number of days on which rain fell, 6 at Levering.

Mean rainfall, 4.16 inches; average daily rainfall, .134 inch; greatest rainfall, 6.73 inches at Pomeroy; least rainfall, 1.42 inches at Oberlin.

Prevailing direction of wind, southwest.

The following extract is from the January, 1885, report of

the "Tennessee Weather Service," under the direction of Hon. A. J. McWhirter:

The month of January was characterized by the abnormally low temperature, the excess of rainfall, and the high winds and electrical disturbances.

The mean temperature for the month was 33°.58, 5°.56 below the December mean, and 4°.13° above the January mean of last year, which was considerably below the normal. The mean of maximum temperature was 62°.23, about the same as the January mean of last year, and the mean of minimum temperatures was 3°.26, nearly 5° below that for the corresponding period of last year. The range of temperature was 16° less than last January. The highest temperature was general about the 8-11th, and the lowest on the 22d, throughout the state.

The mean depth of rainfall was 6.96 inches, a slight excess over that for January of last year. It was pretty evenly distributed throughout the state, with the preponderance in the central and western portions of the eastern division. Only two stations report less than four inches. Melted snow forms a very small proportion of the amount. The days of the greatest rainfall were the 5th, 6th, 11th, 14th, 15th, 16th, 23d, 24th and 31st, corresponding almost throughout the list with those of December. These rains were general. There were only two rainless days during the month, the 2d, and 18th.

The snowfall during the month was light, 0.42 inch. The heaviest fall was in the northern portion of the western division, and in the southwestern portion of the eastern division. The fall in the middle division was very slight. The greatest depth reported was 2.10 inches at Farmingdale, and 2.00 inches at McKenzie and Dyersburg.

Thunder-storms were reported as follows: Greenville, 17th; Quarter, 11th; Maryville, 6th, 9 p. m., discharges of thunder, short and sharp, with vivid flashes of lightning; 11th, 9 p. m., followed by heavy rain; Andersonville, 11th, 6 a. m., with rain; Sunbright, 11th; Grief, 11th, p. m., with vivid lightning; Farmingdale, 12th, 1 a. m.; Fostoria, 11th, 26th, sw.; Cookeville, 11th, 15th; McMinnville, 11th; Manchester, 11th, with heavy rain, 27th; Beech Grove, 11th, sw.; Riddleton, 11th, 15th; Austin, 12th, 3 a. m., 15th; Flat Creek, 11th, 27th; Florence Station, 11th, 15th; Howell, 11th, p. m., 27th, p. m.; Nashville, 11th, 12th, 15th, 16th; Hardison's Mills, 11th, with heavy rain; Hurricane Switch, 11th; Kingston Springs, 11th, 15th; Dickson, 6th, 11th, 15th; Hohenwald, 27th, 8 p. m., se.; McKenzie, 11th, 17th; Dresden, 11th; Trenton, 5th, 11th.

Flood signals.—The system adopted by the government for the establishment of stations along the principal rivers to note the rise and fall and to give timely warning of approaching floods, is eminently a wise one, and will certainly prove a great blessing to those whose property is exposed to these sudden rises. Its benefits have already been felt to the people of our state along the Tennessee and its confluent. Stations are being established along the Cumberland, and in future we hope to be able to give from time to time tables of the stages of these rivers, which, no doubt, will prove very interesting and valuable additions to our reports.

State summary.

Mean temperature, 33°.58; highest temperature, 69° on the 16th at Grief; lowest temperature, -3° on the 22d at Dyersburg; range of temperature, 74°; mean monthly range of temperature, 58°.77; greatest monthly range of temperature, 69° at Riddleton and Hohenwald; least monthly range of temperature, 48° at Barren Plains; mean daily range of temperature, 13°; greatest daily range of temperature, 43° on the 16th at Nashville; least daily

range of temperature, 1° on the 6th at Bolivar and on the 24th at McKenzie and Trenton; mean of maximum temperatures, 62°.23; mean of minimum temperatures, 3°.26.

Mean depth of rainfall, 6.96 inches; mean daily rainfall, 0.224 inch; greatest rainfall, 10.08 inches at Careyville; least rainfall, 3.30 inches at Greeneville; greatest local daily rainfall, 4.70 inches on the 14th at Fostoria.

Days of greatest rainfall, 5th, 6th, 11th, 14th, 15th, 16th, 23d, and 24th; day of greatest rainfall during month, 15th; average number of days on which rain or snow fell, 10.8; average number of clear days, 7; average number of fair days, 8; average number of cloudy days, 16; average snowfall during month, 0.42 inch.

Prevailing direction of wind, north and northwest.

OBSERVATIONS AT NEW WESTMINSTER, B. C.—(N. 49° 13', W. 122° 53').

1884.	January.	February.	March.	April.	May.	June.
TEMPERATURE.						
Mean temperature.....	33.90	29.90	42.00	50.30	55.30	60.40
Above or below mean of ten years.....	-0.40	-7.40	+2.30	+2.40	+1.10	+2.40
Highest maximum.....	48.00	56.00	59.00	73.00	82.00	82.00
Lowest minimum.....	23.00	8.00	21.00	35.00	38.00	45.00
PRECIPITATION.						
Rain and snow.....	8.02	3.70	1.03	2.11	3.05	3.28
Above or below mean of ten years.....	-0.14	-3.90	-4.64	-0.81	-0.44	+0.96
Number of days rain or snow fell.....	12	8	5	9	7	12
Above or below mean of ten years.....	2	-6	-14	-3	-7	+1
Greatest day's fall.....	1.47	0.91	0.75	0.48	0.84	0.88
Snowfall.....	1.50	12.80	0.00	0.00	0.00	0.00
Above or below mean of ten years.....	-16.30	+3.75	-14.10	-0.80	.....	.....

1884.	July.	August.	September.	October.	November.	December.
TEMPERATURE.						
Mean temperature.....	61.80	65.70	54.30	48.20	44.70	25.30
Above or below mean of ten years.....	-1.50	+4.50	-3.00	-0.80	+4.80	-9.50
Highest maximum.....	81.00	90.00	68.00	61.00	58.00	45.00
Lowest minimum.....	49.00	50.00	40.00	34.00	27.00	2.00
PRECIPITATION.						
Rain and snow.....	0.77	7.01	5.03	8.77	3.56	1.01
Above or below mean of ten years.....	-1.01	+5.05	+2.49	+3.07	-3.39	-5.47
Number of days rain or snow fell.....	8	8	15	16	12	12
Above or below mean of ten years.....	.....	.....	+6	+4	.....	-3
Greatest day's fall.....	0.27	2.52	0.87	1.68	0.90	4.10
Snowfall.....	.....	.....	.....	.....	0.00	9.00
Above or below mean of ten years.....	.....	.....	.....	.....	-5.70	+5.00

Yearly mean temperature, 47°.7; below mean, 0°.2; highest temperature, 90°.0; lowest temperature, -2°.0, lowest since 1875. Rainfall in inches, 51.84; below mean, 7.72. Days of rain or snowfall, 124; below mean, 27. Snow in inches, 23.3; below mean, 28 inches.

A. PEELE, Captain,
Canada Meteorological Service.